

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2021/0119318 A1 Hughes et al.

Apr. 22, 2021 (43) **Pub. Date:**

(54) WINDOW ANTENNAS

(71) Applicant: View, Inc., Milpitas, CA (US)

(72) Inventors: Harold Hughes, Los Altos Hills, CA (US); Stephen Clark Brown, San Mateo, CA (US); Dhairya Shrivastava, Los Altos, CA (US)

(21) Appl. No.: 16/949,978

(22) Filed: Nov. 23, 2020

Related U.S. Application Data

- (63) Continuation of application No. 16/849,540, filed on Apr. 15, 2020, which is a continuation of application No. 15/529,677, filed on May 25, 2017, now Pat. No. 10,673,121, filed as application No. PCT/US2015/ 062387 on Nov. 24, 2015.
- Provisional application No. 62/084,502, filed on Nov. 25, 2014.

Publication Classification

(51) Int. Cl. (2006.01)H01Q 1/12 H01Q 1/44 (2006.01)

H01Q 9/04	(2006.01)
G02F 1/163	(2006.01)
H01Q 1/38	(2006.01)
G02F 1/153	(2006.01)
H01Q 9/40	(2006.01)
E06B 3/67	(2006.01)
E06B 7/28	(2006.01)
H01Q 1/24	(2006.01)

(52) U.S. Cl.

CPC H01Q 1/1271 (2013.01); H01Q 1/44 (2013.01); H01Q 9/0407 (2013.01); G02F 1/163 (2013.01); H01Q 1/38 (2013.01); E06B 2009/2464 (2013.01); **H01Q 9/40** (2013.01); H01Q 1/12 (2013.01); E06B 3/6722 (2013.01); E06B 7/28 (2013.01); H01Q 1/246 (2013.01); G02F 1/1533 (2013.01)

(57)ABSTRACT

In one aspect, an apparatus is described that includes a transparent pane having a first surface and a second surface. An electrochromic device (ECD) is arranged over the second surface that includes a first conductive layer adjacent the second surface, a second conductive layer, and an electrochromic layer between the first and the second conductive layers. The apparatus further includes at least one conductive antenna structure arranged over the second surface.

